

**EFFECTIVENESS OF NEGATIVE-PRESSURE WOUND THERAPY COMPARED
TO WET-DRY DRESSING IN PRESSURE INJURIES**

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Pressure injuries are a major health problem in that they are difficult to treat, reduce the patients' quality of life, and increase length of hospital stay and overall health care costs. Furthermore, several possible wound healing complications, such as infections, can lead to mortality.^{1,2} That said, the prevalence of pressure injuries is an important indicator of quality in hospitals.³ Pressure injuries do not only impact health, but also cause social isolation and dependency, resulting in further psychological problems.⁴ The European and US National Pressure Ulcer Advisory Panels' (EPUAP and NPUAP) guidelines recommend NPWT for deep-tissue pressure injuries, namely Stages 3 and 4, as a supportive tool for early-stage treatment. This method is based on applying negative pressure to promote wound healing.^{3,8,9} Several studies report that NPWT increases granulation tissue formation and reduces wound area.^{10,11,12,13} It is indicated that NPWT provides continuous and effective wound debridement in the wound area and increases blood supply to the wound. This study aims to compare the effects of Negative-Pressure Wound Therapy and wet-to-dry dressing on Stages 3 and 4 pressure injuries, and to investigate the consistency of Three-Dimensional Wound Measurement Device findings with Pressure Ulcer Scale for Healing Tool scores.

This study is a randomized controlled trial. This study was conducted among Stages 3 and 4 pressure ulcer patients in the Wound Care Clinic of a university hospital in Istanbul between October 13, 2016 and April 30, 2017. The sample size was determined by power analysis. The subjects were divided into experimental and control groups according to their respective protocol numbers. The protocol numbers ending with odd digits were assigned to the control group, and those ending with even digits were assigned to the experimental group. Verbal and written informed consent were obtained from all patients participating in the study. This study aims to compare the effects of NPWT and wet-to-dry dressing on Stages 3 and 4 pressure injuries after 3 rounds of treatment. A total of 30 patients with Stages 3 and 4 pressure injuries were included in the study. The patients were divided into two groups: the experimental group or Negative-Pressure Wound Therapy group and the control or wet-to-dry dressing group. All patients received 3 rounds of treatment. Data were collected with a Patient Identification Form, Pressure Ulcer Scale for Healing Tool and the findings of Three-Dimensional Wound Measurement Device.

Descriptive characteristics and total PUSH scores of the patients were analyzed using SPSS for Windows, version 22.0 (IBM Corp., Armonk, New York). 3DWM images were recorded in the database of the device software. Device-measured granulation tissue and area findings were analyzed using SPSS. Descriptive data were expressed as number, percentage, mean and standard deviation. The Kolmogorov-Smirnov test was used to determine the normality of sample distribution ($p > .05$). t-test was used to compare the quantitative continuous data between two independent sets of data. Differences between repeated measurements were analyzed by the repeated measures ANOVA test. The significance level was set at $p < .05$ with a confidence interval of 95%. Dunn-Bonferroni post-hoc test should be used and the “p” value should be evaluated according to this test.